BULLETIN 450 MARCH, 1930

Estimated Income From the Ohio Agricultural Industry

V. R. Wertz

OHIO
AGRICULTURAL EXPERIMENT STATION
Wooster, Ohio

CONTENTS

Introduction 3

A Summary of Annual Estimates of Gross Cash Income, Cash Expenses, Net Cash Income, Value of Home-Products, Food and Fuel Consumed on Ohio Farms, and Total Net Income of the Ohio Agricultural Industry, 1920 to 1928 5

Sources of Estimated Gross Cash Income from the Ohio Agricultural Industry, 1910 to 1928 9

Estimated Expenses of the Ohio Agricultural Industry, 1920 to 1928..... 14

Estimates of the Value of Home-Produced Food and Fuel Consumed in Ohio Farm Households, 1920 to 1928 16

Annual Estimates of Quantities, Prices, and Values of Individual Products Sold from Ohio Farms, 1910 to 1928 18

Reliability of Estimates 30

Appendix A. Tables Giving Monthly Estimates of the Gross Cash Income from Ohio's Agricultural Industry by Groups of Products, 1920 to 1928 32

Appendix B. Bibliography 37

This page intentionally blank.

ESTIMATED INCOME FROM THE OHIO AGRICULTURAL INDUSTRY

V. R. WERTZ

INTRODUCTION

Purpose of study.—In recent years an increasing interest has been shown in the volume and trend of income from the agricultural industry. Much information concerning the income and outgo of farmers has been made available thru farm account records, farm business surveys, and complete farm cost account records for the last 15 years. Because of the small number of such records usually available, however, they do not yield data from which the total income from agriculture can be estimated, nor from which an accurate trend of such income over a period of years can be secured.

Indices of prices of farm products likewise have been available for a number of years. Indices of prices have their limitations as measures of trend in the economic status of an industry, and especially of the agricultural industry, where income depends upon the greatly variable quantity of products sold from year to year and from month to month as well as upon the prices of these products. As a rule when the price of a product is highest the farmer has least to sell and when he has much to sell price is low. This condition places a limitation on index numbers of prices as accurate measures of the income from the agricultural industry and is one of the reasons for making the present estimate of income from Ohio agriculture.

Aside from the more general purpose of providing an index of the income from agriculture, the estimates of income and expense, which are given in this study, will also show the relative importance of the various enterprises and groups of enterprises making up the total gross cash income and expenses of this industry. Monthly estimates of gross cash income, Table 17, will provide the necessary data for calculating the normal monthly variation in Ohio's gross cash income from agriculture, which will be of interest to all who sell goods and services or extend credit to Ohio farmers. Sales and credit policies work to the best advantage of all concerned when properly correlated with income.

Estimates made.—Three different types of income from the agricultural industry are given in this study: (1) **gross cash**

income, that is, the total money coming in from the sale of Ohio farm products sold to others than Ohio farmers; (2) **net cash income,** that is, cash income minus cash expenditures for the farm business; and (3) **total net income,** the net cash income plus the value of home-produced food and fuel consumed by Ohio farm households. Gross cash income has been estimated for each year from 1910 to 1919 and by months from 1920 to 1928. The net cash and net total incomes have been estimated by years only from 1920 to 1928.

Methods and sources of material.—Many different methods and numerous sources of data were used in making these estimates. The sources most frequently drawn upon were the United States Census, reports of the United States Department of Agriculture, and summaries of farm and household account records, and farm cost account records kept on Ohio farms by the Rural Economics Department. A complete description of methods and sources of information would extend far beyond the scope of these pages.[1]

In general the method adhered to in estimating the gross cash income was to apply Ohio farm prices to estimated sales of each product by years from 1910 to 1919 and by months from 1920 to 1928. Income was calculated on a sale-year basis rather than on a production, or crop-year, basis, that is, in these estimates farm products counted as income in the months in which they moved from the farm to market rather than in the calendar years in which they were produced. The method of calculating income, whether on a production-year or on a sale-year basis, makes a great difference with respect to some crops. Corn and tobacco, for example, are sold largely in the year following that in which they are produced. To calculate income on a production-year basis would, therefore, be to estimate the income from such crops several months ahead of actual sales, and would be in error, especially in years of abnormally high or abnormally low production.

Sales were, in so far as they could be estimated, net for the industry, that is, net in the sense that they were sales to other persons than Ohio farmers. A sale to another Ohio farmer, while it is a sale for the farmer disposing of the goods, cannot be considered a sale for the farming industry as a whole, but rather as a transfer within the industry itself. Many sales of grain, hay, and

[1]The writer wishes to acknowledge here the valuable information furnished by individuals and organizations interested in Ohio agriculture and to express his appreciation for the materials furnished by various departments of the College of Agriculture of Ohio State University and by the members of the Bureau of Agricultural Economics, Washington, D. C.

the like made by individual farmers to other Ohio farmers, therefore, do not represent sales for the agricultural industry as a whole and were not so regarded until disposed of in some form to other persons than Ohio farmers.

In estimating the outlay for business purposes the method was likewise to arrive at estimated quantities of goods purchased from others than Ohio farmers and to apply to these quantities estimated prices paid by Ohio farmers. Purchases of products from other Ohio farmers were not included as expenses in these estimates.

The estimated value of food and fuel furnished Ohio farm households by home farms is the product of the estimated quantities of such goods and their Ohio farm prices.

SUMMARY OF ANNUAL ESTIMATES

A summary of estimates of the annual income and expenses of the Ohio agricultural industry is given in Tables 1 and 2 and in Figures 1 and 2.

TABLE 1.—Estimated Gross Cash Income From the Ohio Agricultural Industry, 1910 to 1928, With Cash Expenses and Net Cash Income, 1920 to 1928

Year	A Gross cash income*	B Cash expenses for business purposes†	C Net cash income (A—B)
	Dol.	*Dol.*	*Dol.*
1910	221,071,000		
1911	193,998,000		
1912	203,472,000		
1913	215,506,000		
1914	229,995,000		
1915	238,118,000		
1916	262,772,000		
1917	419,591,000		
1918	525,981,000		
1919	582,757,000		
1920	520,077,000	191,696,000	328,381,000
1921	295,827,000	147,003,000	148,824,000
1922	294,251,000	149,833,000	144,418,000
1923	326,820,000	154,978,000	171,842,000
1924	327,352,000	151,670,000	175,682,000
1925	351,643,000	177,702,000	173,941,000
1926	373,883,000	184,594,000	189,289,000
1927	350,595,000	197,966,000	152,629,000
1928	319,844,000	200,740,000	119,104,000
5-year average, 1924-1928	344,663,000	182,534,000	162,129,000

*Excluding the value of goods sold to Ohio farmers.
†Excluding the value of goods purchased from Ohio farmers.

Gross cash income.—The estimated gross cash income from the Ohio agricultural industry (Column A, Table 1) averaged 213 million dollars during the five pre-war years, 1910-1914; 512 million during the four years of high prices, 1917-1920; and 345 million for the

last five years covered by this study. Considering the five years, 1910-1914, as a base, this estimated income increased 141 percent during the four years, 1917-1920, and for the last five years has averaged 62 percent above pre-war, whereas the prices of Ohio farm products stood only 49 percent higher in the last 5-year period than in 1910-1914. The fact that estimated income has increased relatively more rapidly than the prices of Ohio farm products since the period 1910-1914 indicates that Ohio farmers have had more to sell since that date.

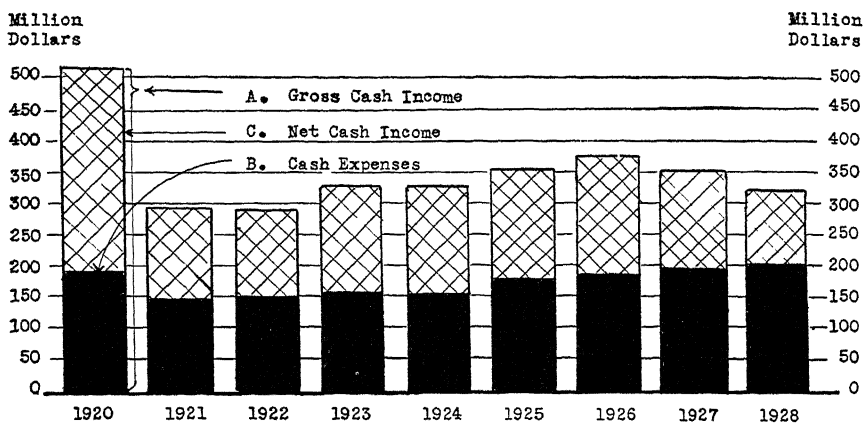

Fig. 1.—Estimated Gross Cash Income From the Ohio Agricultural Industry Divided Into Cash Expenses and Net Cash Income, 1910-28

Cash expenses for business purposes.—Cash outlay by Ohio farmers for business purposes has been estimated only for the 9-year period, 1920-1928. Cash expenses averaged $182,534,000 per year for the period 1924-1928. In 1920 these expenses amounted to $191,696,000, and in 1921 they fell to $147,003,000, after which there was an increase. Estimated cash outlay amounted to $200,740,000 in 1928, 9 million dollars higher than in 1920. An itemized list of the various farm expenses making up the total in Column B will be found in Table 6.

Net cash income.—The net cash income from Ohio agriculture, that is gross cash income less cash expenses, Column C, averaged a little more than 162 million dollars in the last five years. This net cash income fell from $328,381,000 in 1920 to $144,418,000 in 1922, and then made a fairly steady increase until 1926, when a favorable year for grains and livestock in Ohio sent both gross and net cash incomes to their highest level since 1920. The estimated net cash income then decreased from $189,289,000 in 1926 to $152,629,000 in

1927 and to $119,104,000, in 1928. This decline in net cash income following 1926, was due to the fact that the gross cash income decreased while the cash expenses increased. An exceptionally poor grain year in 1928 and an income from meat animals lower than in any year since 1924, together with cash expenses higher than in any year since the war, gave Ohio agriculture its lowest net cash income in 1928.

TABLE 2.—Estimated Net Income From the Ohio Agricultural Industry, 1920-1928

Year	A Net cash income	B Value of home-produced food and fuel consumed on farms	C Total net income (A+B)*
	Dol.	*Dol.*	*Dol.*
1920	328,381,000	113,417,000	441,798,000
1921	148,824,000	74,113,000	222,937,000
1922	144,418,000	72,317,000	216,735,000
1923	171,842,000	79,815,000	251,657,000
1924	175,682,000	72,019,000	247,701,000
1925	173,941,000	81,227,000	255,168,000
1926	189,289,000	81,268,000	270,557,000
1927	152,629,000	79,999,000	232,628,000
1928	119,104,000	75,550,000	194,654,000
5-year average, 1924-1928	162,129,000	78,013,000	240,142,000

*Return to unpaid labor and management, and to capital engaged in Ohio agriculture.

One of the outstanding features revealed by the figures in Table 1 and its accompanying chart is that the increase in cash expenses of the Ohio agricultural industry since 1921 was relatively more rapid than the gross cash income from this industry.

Value of home-produced food and fuel.—Income from Ohio agriculture is in the form of goods as well as cash. The estimated value of home-produced food and fuel consumed by Ohio farm households averaged $78,013,000 for the five years ending with 1928. This income in goods, as will be seen from Table 2 and Chart 2, remained fairly steady since 1920.

Total net income.—The total net income derived from the Ohio agricultural industry, which is made up of approximately two-thirds cash and one-third food and fuel furnished the farm household, averaged $240,142,000 for the five years, 1924-1928. The highest total net income in the nine years 1920 to 1928 was $441,798,000 in 1920. In two years it had fallen to $216,735,000. There was a general increase in the net income from 1922 to 1926 and a decrease in each of the following years.

It should be pointed out here that no attempt has been made in this study to estimate the total income of people engaged in

agriculture in Ohio, nor even of those operating farms in the State, but to estimate only that part of their incomes which was derived from purely agricultural operations. A considerable portion of the Ohio farm operator's income is derived from other sources, such as road work, hauling, mining, and similar outside activities, as well as from investments in other fields, none of which was included in these estimates.

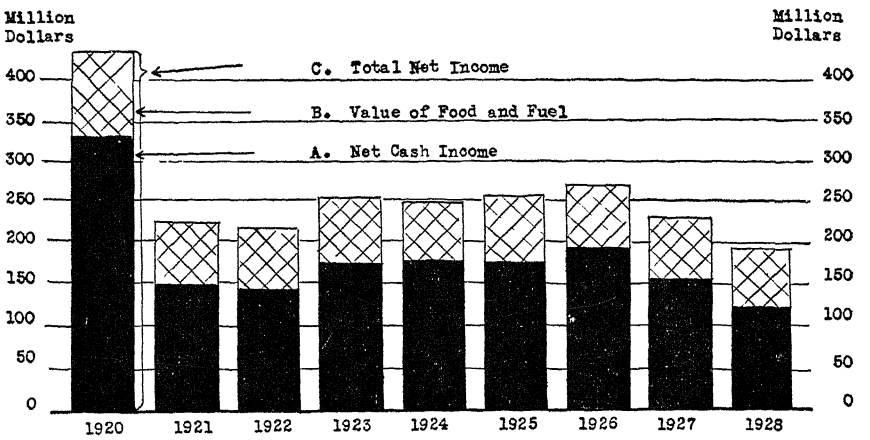

Fig. 2.—Estimated Net Income From the Ohio Agricultural Industry in the Form of Cash and the Value of Home-Produced Goods Consumed by Farm Households, 1920 to 1928

Income and expense per farm.—It is of interest to summarize the foregoing estimates of income and outgo of Ohio agriculture on a per-farm basis. The average income and outgo per farm in Ohio for the five years, 1924-1928, are given in Table 3. These averages were obtained by dividing the estimated average income and outgo for the five years by the estimated average number of farms in the State over this same period.

TABLE 3.—Average Annual Income and Expenses of the Ohio Agricultural Industry per Farm, 1924 to 1928

		Dol.
1	Gross cash income (from sales)*	1424
2	Cash expense (for the farm business)†	754
3	Net cash income (from sales)	670
4	Value of home-produced food and fuel consumed by Ohio farm households	322
5	Total net income from cash sales and home-produced food and fuel consumed on farms	992

*Exclusive of sales to Ohio farmers.
†Exclusive of purchases from Ohio farmers.

Such averages as these should be used only with their limitations in mind. There are few farms in Ohio that correspond with these averages. Most will rank either above or below. While $992

would be a large net income for many farms it is far below that actually returned by many in the better farming sections. Ohio farms vary considerably in size. While the average size in 1925 was 91 acres, 14 percent of our farms were under 20 acres, and 0.3 percent were over 500 acres. It should also be kept in mind, that income from sources other than agricultural products was not included in this net income per farm.

SOURCES OF GROSS CASH INCOME

Proportion of total income from various groups of products.— The annual gross cash income from the principal groups of products since 1910 and the percentages showing the proportion of this total income derived from various groups of products, such as meat animals and dairy products are given in Table 4. For the 9-year period, 1920-1928, meat animals accounted for 34 percent of the total gross cash income. Of this 34 percent 21 percent was from the sale of hogs, 8 percent from cattle, 3 percent from calves, and 2 percent from sheep and lambs. Dairy products, including milk and butterfat, accounted for 19 percent, grains 17 percent, poultry and eggs 11 percent, tobacco 2 percent, wool 1.7 percent, vegetables 5 percent, fruits 3 percent, and all other sources 7 percent of the total gross cash income.

By combining the income from animals and animal products we find that 66 percent, or two-thirds, of the total gross cash agricultural income in Ohio was derived from the sale of animals and animal products during the 9 years 1920-1928. Two limitations should be held in mind, however, when making use of these figures to show the proportion of income from animals and from crops. In the first place, Ohio farmers generally sell their grain, crops, and hay and other roughage very largely in the form of animals or animal products, which means that a percentage comparison such as that given here is unfair when used to show the importance of crops as compared with animals. These percentages represent the importance of these two groups of products in sales only, not in production. In the second place, it should be remembered that saying 34 percent of the gross cash income from the agricultural industry was derived from the sale of crops, is different from saying that only 34 percent of the average Ohio farmer's gross cash income from agriculture was derived from the sale of crops; for, as pointed out heretofore, many individual sales of such crops were to other Ohio farmers and, therefore, were not considered sales for the agricultural industry as a whole, but rather transfers of goods from

TABLE 4.—Estimated Gross Cash Income From the Sale of Products From Ohio Farms, 1910-1928

Year	Meat animals	Dairy products	Grains	Poultry and eggs	Tobacco	Wool	Vegetables	Fruits	All other	Total
	Thousand dollars	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars**	*Thousand dollars*	*Thousand dollars*
1910	82,540	26,856	46,335	18,872	9,251	4,056	.....	33,161	.....	221,071
1911	72,349	24,068	41,575	15,792	7,532	3,582	.....	29,100	.....	193,998
1912	76,549	26,907	40,365	19,032	6,217	2,881	.....	30,521	.....	203,472
1913	85,627	27,778	40,995	18,879	7,210	2,691	.....	32,326	.....	215,506
1914	89,971	28,862	46,809	19,671	6,999	3,184	.....	34,499	.....	229,995
1915	86,798	28,679	57,180	19,039	6,896	3,808	.....	35,718	.....	238,118
1916	106,870	33,736	49,124	21,388	7,733	4,505	.....	39,416	.....	262,772
1917	157,840	50,927	95,876	30,959	12,723	8,327	.....	62,939	.....	419,591
1918	202,562	61,657	114,363	35,588	24,598	8,316	.....	78,897	.....	525,981
1919	222,152	72,675	132,346	40,980	19,197	7,993	.....	87,414	.....	582,757
1920	178,628	86,227	104,491	44,940	21,601	8,357	23,559	16,868	35,406	520,077
1921	101,730	58,741	48,842	32,613	7,800	3,061	12,502	9,304	21,234	295,827
1922	109,299	53,864	44,843	31,058	5,858	5,268	13,796	9,893	20,372	294,251
1923	102,490	67,703	53,894	32,749	7,814	6,400	20,157	11,740	23,873	326,820
1924	103,652	65,064	60,071	35,274	6,114	5,946	16,378	8,636	26,217	327,352
1925	121,523	66,421	58,846	40,851	5,855	5,994	20,519	8,361	23,273	351,643
1926	134,323	65,109	65,273	44,768	7,517	5,519	17,949	10,082	23,343	373,883
1927	112,806	69,457	60,398	42,147	4,428	5,537	21,466	9,779	24,577	350,595
1928	110,357	71,776	31,891	44,938	3,942	6,914	16,849	9,360	23,817	319,844
9-year average, 1920-28	119,423	67,151	58,728	38,815	7,881	5,888	18,131	10,447	24,679	351,144
Percent	34.0	19.1	16.7	11.1	2.2	1.7	5.2	.30	7.0	100

*Vegetables, fruits and all other combined from 1910-19.

one plant to another within the industry itself, still to be disposed of in some form outside the agricultural industry of the State. This also holds to a lesser degree with respect to livestock sold. Some feeder stock and some breeding stock were sold by one farmer to another within the State before they finally reached a destination wholly outside the industry, and were therefore omitted from these estimates. While the percentages given here show crops accounting for 34 percent of the total gross cash income, individual farm income figures, calculated on the basis of all sales regardless of whether or not they were made to other Ohio farmers would probably show a slightly higher percentage of income from crops.[2]

Proportion of gross cash income from individual farm products.—In order to show the relative importance of the various individual farm products making up the total gross cash income from Ohio agriculture, figures are given in Table 5 showing the average income from each product and the percentage of income derived from each product for the 5-year period, 1924-1928. It will be seen from this table that, while the income from meat animals—hogs, cattle, calves, and sheep—made up 34 percent of the total income in the five years, hogs alone accounted for 21 percent. Likewise 12 percent out of the 20 percent derived from the sale of dairy products came from the sale of whole milk. Nearly twice as much income was derived from the sale of eggs as from poultry. Of the three miscellaneous animal products—wool, baby chicks, and honey and beeswax—wool was the most important, contributing nearly 6 million dollars, 1.7 percent, of the total gross cash income.

Crops in this five-year period accounted for 32 percent of the total gross cash income. Grains were, from the standpoint of sales, the most important crops in Ohio. The income from them made up 16 percent of the total. Of this one-half, or 8 percent was derived from wheat, 5 percent from corn, and 2.6 percent from oats.

Of vegetables sold from Ohio farms, white potatoes ranked first, accounting for over 2 percent of the total gross cash agricultural income. Apples were the most important fruit crop and accounted for 1.3 percent of the total income. Hay, flowers, and tobacco accounted for 6 of the 8 percent of income contributed by the group of miscellaneous products.

Trend of income from groups of products since 1910.—The greatest increase in gross cash income from the pre-war period, 1910-1914, to the period of war prices, 1917-1920, was made in the

[2]The net income per farm or for the agricultural industry of the State should be the same, however, whether calculated on a per-farm basis or as calculated in this study.

sale of meat animals—109 million dollars. Grains increased 68 million; dairy products 36 million, poultry and eggs 20 million, tobacco 12 million, and wool 5 million. The greatest percentage increases were in the income from tobacco, 162 percent, and from grains—mainly wheat, corn, and oats—159 percent. The incomes from meat animals and from dairy products each increased about 135 percent, from poultry and eggs 107 percent, and from wool 137 percent. The average income from all products sold from Ohio

TABLE 5.—Five-Year Average Gross Cash Income* From the Ohio Agricultural Industry, by Sources, 1924-1928

Items	Income	Portion of total income
	Dol.	*Pct.*
I. Animals and animal products		
A. Meat animals		
Hogs	73,220,000	21.24
Cattle	27,652,000	8.05
Calves	8,566,000	2.49
Sheep and lambs	6,994,000	2.03
Total meat animals	116,532,000	33.81
B. Dairy products		
Whole milk	41,525,000	12.05
Butterfat	26,041,000	7.55
Total dairy products	67,566,000	19.60
C. Poultry and eggs		
Poultry	14,897,000	4.32
Eggs	26,699,000	7.75
Total poultry products	41,596,000	12.07
D. Miscellaneous animal products		
Wool	5,982,000	1.73
Baby chicks*	1,090,000	.32
Honey and beeswax	106,000	.03
Total miscellaneous	7,178,000	2.08
Total (animals and animal products)	232,872,000	67.56
II. Crops		
A. Grains		
Wheat	27,882,000	8.09
Corn	17,498,000	5.08
Oats	9,134,000	2.65
Rye	192,000	.05
Barley	286,000	.08
Buckwheat	305,000	.09
Total grains	55,296,000	16.04
B. Vegetables		
Potatoes	8,097,000	2.35
Dry onions	1,532,000	.44
Sweet corn	1,027,000	.30
Cabbage	833,000	.24
Celery	369,000	.11
All other outdoor and greenhouse vegetables	6,775,000	1.97
Total vegetable crops	18,633,000	5.41

TABLE 5.—Five-Year Average Gross Cash Income* From the Ohio Agricultural Industry, by Sources, 1924-1928—Continued

Items	Income	Portion of total income
	Dol.	*Pct.*
C. Fruits		
Apples	4,525,000	1.31
Peaches	1,788,000	.52
Pears	128,000	.04
Plums	74,000	.02
Cherries	261,000	.08
Grapes	738,000	.21
Strawberries	1,044,000	.30
All other small fruit		
Total fruit crops	9,243,000	2.68
D. Miscellaneous crops		
Hay	7,506,000	2.18
Flowers	7,539,000	2.19
Tobacco	5,571,000	1.62
Forest products	2,844,000	.82
Sugar beets	2,511,000	.73
Nursery products*	1,514,000	.44
Maple syrup and sorghum	1,135,000	.33
Total miscellaneous crops	28,620,000	8.31
Total crops	111,792,000	32.44
Grand total animals and animal products and crops	344,666,000	100.00

*Sales made from one Ohio farm to another for production purposes were not included in the estimated income from the agricultural industry as a whole. For example, the estimated income from the sale of all baby chicks by Ohio hatcherymen amounted to over 5 million dollars in 1928, but the greater portion of these chicks were bought by Ohio farmers, and therefore are not included in this table. Nursery products sold by Ohio nurserymen were likewise bought in part by Ohio farmers and are, to this extent, omitted from the table. The estimated total gross cash income from Ohio nursery stock was 2½ million dollars in 1928.

farms increased 141 percent from the pre-war period to the period of high prices, 1917 to 1920, while the price level of Ohio farm products as a whole increased 104 percent.

With the exception of dairy and poultry products, the average income from each group of farm products was lower in the last five years covered by this study, 1924 to 1928, than during the four years 1917 to 1920.

The income from each group, with the exception of tobacco, averaged higher in the last 5-year period than in the pre-war 5-year period. During the last 5-year period the income from dairy products stood 151 percent above its pre-war level, poultry products 125 percent, wool 72 percent, meat animals 43 percent, and grains 28 percent higher. The income from tobacco fell 25 percent below its pre-war level. As pointed out previously, the average gross cash income from all Ohio farm products sold from 1924 to 1928 stood 62 percent above its pre-war level, while the price level of Ohio farm products as a whole in the latter 5-year period stood 49 percent above its pre-war level.

An outstanding feature of the trends in gross cash income from the various groups is that the income from both dairy and poultry products has shown a large and a fairly steady gain since 1910.

ESTIMATED CASH EXPENSES OF THE OHIO AGRICULTURAL INDUSTRY

Trend in total farm business expenses.—The estimated total cash outlay of the Ohio agricultural industry for business purposes and the main items of expense making up this total are given in Table 6.

The estimated annual outlay for farm business purposes averaged 151 million dollars from 1921 to 1924, and 190 million from 1925 to 1928, an increase of 26 percent. During the same period the average gross cash income increased from 311 million to 349 million, only 12 percent. These expenses had reached $200,740,000 in 1928 as compared with $191,696,000 in 1920.

Distribution of expenses.—The various groups of cash expenses are ranked in Table 6 according to their relative importance. This ranking places taxes first as the most important item of cash expense, accounting for 25 percent of the total outlay of the Ohio agricultural industry. Wages made up 18 percent of the total, farm implements and machinery 16 percent, commercial feeds 11 percent, fertilizer and lime 8 percent, farm buildings 7 percent, feeder stock 4 percent, twine 1 percent, and all other items, including veterinary fees, fencing, gas and oil, and other miscellaneous items 10 percent.

Trend in individual items of farm expense.—For the 4-year period 1925-1928 expenses averaged 26 percent higher than for the preceding four years. The greatest gain in outlay in the last four years over the preceding four years was for farm implements and machinery. This outlay averaged 21 million dollars per year for the period 1921-1924 and over 32 million during 1925-1928, a gain of 11 million dollars, or 52 percent. The next most important gain was that of 9 million dollars, or 60 percent, in the outlay for commercial feeds. Taxes increased 8½ million, or 21 percent; expenditures for miscellaneous products, such as gasoline, fencing, tile, and dues to farm organizations, increased 4 million, or 26 percent; fertilizer and lime 3½ million, 32 percent; and wages, farm buildings, feeder stock, and twine 3 million, 6 percent.

TABLE 6.—Estimated Cash Expenses of the Ohio Agricultural Industry, 1920-1928

Year	Taxes*	Wages	Farm implements and machinery	Commercial feeds	Fertilizer and lime	Farm buildings	Feeder stock†	Twine	Miscellaneous items‡	Total§
	Thousand Dollars	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*	*Thousand Dollars*
1920	37,903	42,117	33,712	20,609	12,546	15,512	8,296	1,831	19,170	191,696
1921	38,521	28,999	19,216	15,457	10,300	12,099	6,485	1,226	14,700	147,003
1922	40,181	25,692	20,901	15,222	12,017	11,789	7,994	1,054	14,983	149,833
1923	40,086	29,253	22,924	15,457	11,489	12,410	6,583	1,278	15,498	154,978
1924	40,679	29,217	21,576	14,286	11,489	12,565	5,264	1,427	15,167	151,670
1925	44,083	29,180	25,958	25,058	15,055	12,875	6,157	1,566	17,770	177,702
1926	47,215	29,871	31,689	19,438	15,055	13,030	8,036	1,801	18,459	184,594
1927	51,013	30,270	36,746	23,419	14,791	13,185	7,354	1,391	19,797	197,966
1928	51,223	29,762	34,723	29,040	14,659	13,030	6,944	1,285	20,073	200,740
9-year average, 1920-28	43,434	30,485	27,494	19,776	13,045	12,944	7,013	1,429	17,291	172,909
Percent	25	18	16	11	8	7	4	1	10	100

*Estimated total tax paid on Ohio farm property.

†Estimated amount spent for feeder stock shipped in from outside the State.

‡Includes the outlay for gasoline and oil for business purposes, fencing, tile for drainage, half of the telephone and farm paper bills, farm organization dues, etc.

§Total cash outlay for farm business purposes exclusive of interest on capital invested in the farming business.

The chief cause then for this increase of 26 percent in farm business expenses from 1921-1924 to the latter 4-year period was the increase in outlay for farm implements, commercial feeds, and taxes, these three items accounting for 72 percent of the total increase.

VALUE OF HOME-PRODUCED FOOD AND FUEL FURNISHED OHIO FARM HOUSEHOLDS

The income in food and fuel averaged 78 million dollars, or $322 per farm, for the five years ending 1928. The question which naturally arises next is: What are the main items which make up this income in home-produced food and fuel consumed by Ohio farm households?

Items of home-produced food and fuel.—The most important single source of home-produced farm food was the farm poultry flock (Table 7), which supplied poultry and eggs amounting to 23 percent of the total for the 9-year period, 1920-1928. Their value averaged $71 per farm during the five years ending 1928. One of the reasons why poultry products played such an important part in the farm family living is that a large percentage of farms kept chickens. The Census of Agriculture shows that 92 percent of Ohio farms kept poultry in 1925. Dairy products, milk and butterfat, 21 percent, were almost as important as poultry products in the total value of home-produced goods consumed in the nine years. During the last five years of this period the value of milk and butterfat furnished Ohio farm households averaged $68 per farm.

Next to poultry and dairy products, the most important home-produced farm foods were garden crops and meats, that is, meats from the larger meat animals—pork, beef, veal, and mutton. During this 9-year period these two groups of products made up 18 percent and 17.7 percent, respectively, of the total value of family living from the farm. During the 5-year period, 1924 to 1928, the value of each of these groups amounted to $61 per farm.

For this 9-year period the value of fruits amounted to 10.8 percent and for the last five years of this period, to 9 percent of the total value, or $30 per farm. Poultry and eggs, dairy products, garden truck, meats, and fruits accounted for 90 percent. The remaining 10 percent consisted of 8 percent from fuel—wood, coal, gas, etc.—produced on farms, and 2 percent from grains ground for home use, syrup, sorghum, and honey.

TABLE 7.—Estimated Value of Home-Produced Goods Consumed on Ohio Farms, 1920-1928

Year	Poultry and eggs	Dairy products	Garden truck	Meats	Fruits	Fuels	Grains	Syrup and sorghum	Honey	Total
	Thousand dollars	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
1920	25,464	22,910	19,688	18,272	14,950	8,855	2,620	353	305	113,417
1921	18,249	15,402	10,443	13,087	8,138	7,056	1,337	255	146	74,113
1922	16,726	13,711	11,409	12,619	8,625	7,619	1,186	268	154	72,317
1923	16,866	16,750	16,423	11,838	9,900	6,425	1,170	290	153	79,815
1924	16,408	15,752	13,281	12,080	6,958	5,807	1,303	279	151	72,019
1925	18,147	16,142	16,404	15,745	6,734	5,934	1,708	271	142	81,227
1926	18,105	16,055	14,194	17,283	7,754	6,058	1,387	301	131	81,268
1927	16,352	16,881	16,806	15,090	7,754	5,398	1,315	282	121	79,999
1928	17,879	17,099	13,052	13,038	7,676	4,929	1,476	281	120	75,550
9-year average, 1920-28	18,244	16,745	14,633	14,339	8,721	6,453	1,500	287	158	81,081
Percent	22.5	20.6	18.0	17.7	10.8	8.0	1.8	.4	.2	100

It is impossible, to be sure, to draw a sharp line of demarcation between the farm as a business and the farm as a home, but a rough distinction was made here. Altho a part of the value of family living from the farm, the rental value of farm dwellings was not included because in practically all other businesses dwellings are thought of as separate from the business itself. Expenses of building and maintaining farm dwellings were likewise omitted from cash farm expenses.

QUANTITIES, PRICES, AND VALUES OF INDIVIDUAL PRODUCTS SOLD FROM OHIO FARMS

Annual estimates of the gross cash income from Ohio agriculture by groups of products are given in Table 4. The income from various products making up these groups will now be considered in greater detail. Estimated quantities and average prices of the more important products that make up the total gross cash income from Ohio agriculture and the income from them are given in Tables 8 to 16. These figures are of value mainly in sizing up the causes for increases and decreases in income.

Meat animals.—During the 19 years ending 1928, 60 percent of the income from the sale of meat animals was derived from hogs, 28 percent from cattle, 7 percent from calves, and 5 percent from sheep and lambs (Table 8).

The major cause for the increased income from hogs during the war and in more recent years was an increase in hog prices. Hundredweight of hogs sold averaged 24 percent more and prices 35 percent higher in the last 5-year period than in the pre-war 5-year period.

Cattle sales, including dairy cattle sold for meat, decreased in the last few years. From 1910 to 1914 sales of Ohio cattle averaged 4,515 hundredweight, and from 1924 to 1928 3,519 hundredweight. This decrease was due mainly, no doubt, to the cycle in beef cattle production. The higher prices which have prevailed since the war were responsible for maintaining the income from beef cattle slightly above its pre-war level. Ohio farm prices of beef cattle averaged $6 for the period 1910-1914, and $7.95 from 1924-1928.

The income from both calves and sheep in recent years has remained well above its pre-war level, due chiefly to better prices than in the pre-war period. The Ohio farm price of calves averaged $11.51 in the last 5-year period as compared with $7.81 in the

TABLE 8.—Meat Animals Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

Year	Hogs			Cattle			Calves			Sheep			Total Income
	Sales	Average price	Income	Sales*	Average price	Income	Sales	Average price	Income	Sales†	Average price	Income	
	Cwt.	*Dol.*	*Dol.*	*Cwt.*	*Dol.*	*Dol.*	*Cwt.*	*Dol.*	*Dol.*	*Cwt.*	*Dol.*	*Dol.*	*Dol.*
1910	5,483,000	8.46	46,386,000	4,534,000	5.45	24,713,000	679,000	7.44	5,051,000	1,016,000	6.29	6,390,000	82,540,000
1911	6,148,000	6.39	39,288,000	4,835,000	4 91	23,738,000	671,000	6.73	4,517,000	1,003,000	4.79	4,806,000	72,349,000
1912	5,796,000	7.07	40,976,000	4,391,000	5.86	25,729,000	671,000	7.38	4,952,000	888,000	5.51	4,892,000	76,549,000
1913	5,790,000	7.99	46,260,000	4,282,000	6.76	28,494,000	656,000	8.71	5,711,000	753,000	6.25	4,707,000	85,627,000
1914	6,055,000	7.86	47,593,000	4,536,000	7.04	31,932,000	671,000	8.79	5,897,000	706,000	6.44	4,549,000	89,971,000
1915	6,401,000	6.87	43,975,000	4,882,000	6.76	33,001,000	671,000	8.37	5,614,000	597,000	7.05	4,208,000	86,798,000
1916	6,729,000	8.88	59,756,000	4,960,000	7.19	35,661,000	694,000	9.42	6,541,000	579,000	8.49	4,912,000	106,870,000
1917	6,349,000	14.88	94,479,000	5,354,000	8.89	47,595,000	717,000	11.94	8,564,000	599,000	12.02	7,202,000	157,840,000
1918	7,803,000	16.71	130,386,000	5,111,000	10.42	53,251,000	748,000	13.73	10,277,000	629,000	13.76	8,648,000	202,562,000
1919	8,815,000	16.64	146,685,000	5,158,000	10.76	55,497,000	771,000	15.25	11,762,000	636,000	12.90	8,208,000	222,152,000
1920	7,849,000	13.67	107,313,000	5,270,000	9.77	51,473,000	940,000	14.39	13,527,000	539,000	11.72	6,313,000	178,628,000
1921	7,336,000	8.26	60,613,000	4,424,000	6.53	28,903,000	820,000	9.56	7,834,000	591,000	7.41	4,380,000	101,730,000
1922	7,269,000	9.00	65,443,000	4,824,000	6.29	30,327,000	824,000	9.21	7,591,000	613,000	9.69	5,938,000	109,299,000
1923	8,178,000	7.37	60,245,000	4,204,000	6.76	28,411,000	801,000	9.75	7,813,000	592,000	10.17	6,021,000	102,490,000
1924	7,956,000	8.08	64,246,000	3,727,000	6.75	25,155,000	772,000	9.96	7,688,000	607,000	10.81	6,563,000	103,652,000
1925	6,817,000	11.56	78,833,000	3,591,000	7.41	26,615,000	826,000	10.73	8,863,000	593,000	12.15	7,212,000	121,523,000
1926	7,285,000	12.53	91,307,000	3,680,000	7.33	26,985,000	773,000	11.48	8,879,000	629,000	11.37	7,152,000	134,323,000
1927	6,891,000	10.00	68,902,000	3,428,000	8.11	27,801,000	696,000	11.95	8,318,000	701,000	11.10	7,785,000	112,806,000
1928	6,965,000	9.02	62,810,000	3,171,000	10.16	32,204,000	676,000	13.44	9,084,000	546,000	11.47	6,259,000	110,357,000
19-yr. av., 1910-28	.....	.....	71,342,000	....	....	33,576,000	.....	.....	7,815,000	....	.....	6,113,000	118,846,000
Percent...	.. ..	... .	60.03	....	.....	28.25	....	....	6.58	....	....	5.14	100

*Cattle sales include dairy cows sold as meat animals as well as beef cattle.
†Sheep sales include lambs sold as meat animals.

pre-war period, an increase of 47 percent; the price[3] of sheep and lambs averaged $11.38 as compared with $5.86, an increase of 94 percent.

Dairy products.—An outstanding feature of the dairy industry in Ohio is the rapidity with which it has expanded since 1910. During the five years, 1910 to 1914, the income from dairy products—exclusive of that from veal calves and dairy cattle sold for meat, which is included with the income from meat animals—accounted for 13 percent and in the last five years for 19 percent of the total gross cash income. In comparing the importance of the dairy enterprise with other separate enterprises, such as poultry or hogs, it would be desirable to include in dairy sales the income from dairy animals sold for meat if such could be estimated separately. If the income from the sale of dairy calves and other dairy animals sold for meat were added to that from whole milk and butterfat, the income from dairying would easily rank this enterprise as the most important single agricultural enterprise in the state.

The rapid increase in income from dairying in the state has been due to increases in the quantity of milk produced and to rising prices for milk and butterfat. The quantity of whole milk sold averaged 6,922,000 hundredweight or 69 percent greater from 1924 to 1928, than from 1910 to 1914. During the same time the price of whole milk increased $1 per hundred, or 69 percent, and butterfat 20 cents per pound, or 83 percent. The combined effect of increased production and higher prices for milk and butterfat was to increase the income from the dairy industry in the State 41 million dollars, or 151 percent from the pre-war period to the last 5-year period. This is slightly above the level at which the gross cash income from dairy products stood during the period of high prices, 1917-1920. For the five years ending in 1928 this income averaged $67,565,000 as compared with $63,372,000 during the four years of high prices.

The percentages showing the relative importance of whole milk and butterfat, including all milk not sold as whole milk, in the total gross cash income from dairying are given in Table 9. For the period 1910-1928 the sale of whole milk accounted for 58 percent of the total gross cash income from dairy products. As might have been anticipated, a larger proportion of the milk produced in Ohio was sold in the form of whole milk as this industry expanded.

[3]A weighted average price, weighted according to the ratio between sheep and lambs sold.

From 1910 to 1914, 54 percent of the gross cash income from dairying was from the sale of whole milk, whereas for the five years ending in 1928, 61 percent of this income came from the sale of whole milk.

TABLE 9.—Whole Milk and Butterfat Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

Year	Whole milk			Butterfat			
	Sales	Average price	Income	Sales*	Average price	Income	Total income
	Cwt.	*Dol.*	*Dol.*	*Lb.*	*Cts.*	*Dol.*	*Dol.*
1910	19,019,000	1.41	14,127,000	53,037,000	24	12,729,000	26,856,000
1911	9,987,000	1.30	12,984,000	52,783,000	21	11,084,000	24,068,000
1912	9,866,000	1.46	14,409,000	52,074,000	24	12,498,000	26,907,000
1913	9,906,000	1.54	15,255,000	52,180,000	24	12,523,000	27,778,000
1914	10,110,000	1.54	15,570,000	53,169,000	25	13,292,000	28,862,000
1915	10,391,000	1.50	15,586,000	54,553,000	24	13,093,000	28,679,000
1916	10,899,000	1.68	18,311,000	57,129,000	27	15,425,000	33,736,000
1917	11,498,000	2.65	30,470,000	60,168,000	34	20,457,000	50,927,000
1918	12,114,000	3.00	36,342,000	63,287,000	40	25,315,000	61,657,000
1919	12,653,000	3.24	40,997,000	65,996,000	48	31,678,000	72,675,000
1920	13,442,000	3.48	46,727,000	66,197,000	60	39,500,000	86,227,000
1921	14,085,000	2.38	33,488,000	65,526,000	39	25,253,000	58,741,000
1922	14,644,000	2.08	30,430,000	64,379,000	36	23,434,000	53,864,000
1923	15,412,000	2.51	38,689,000	64,047,000	45	29,014,000	67,703,000
1924	16,200,000	2.37	38,344,000	63,649,000	42	26,720,000	65,064,000
1925	16,495,000	2.43	40,096,000	61,276,000	43	26,325,000	66,421,000
1926	16,581,000	2.44	40,387,000	58,240,000	42	24,722,000	65,109,000
1927	17,256,000	2.51	43,279,000	57,306,000	46	26,178,000	69,457,000
1928	17,970,000	2.53	45,517,000	56,412,000	47	26,259,000	71,776,000
19-yr. av., 1910-28			30,053,000			21,868,000	51,921,000
Percent			58			42	100

*All milk sold in any form other than whole milk has been calculated as butterfat sales.

Grains.—The estimated gross cash income from Ohio grains for the five years ending in 1927[4] averaged $59,696,000 as compared with $111,769,000 during the war period, 1917-1920, and $43,216,000 for the five pre-war years. This amounts to an average increase of 38 percent in income in the latter 5-year period over that from 1910 to 1914. Grains have shown the least gain in recent years over pre-war of any of the main income groups. Next to the income from tobacco, however, the gross cash income from grains showed the greatest percentage gain of any of the major groups of Ohio farm products during the period of high war prices. The income from grains averaged 159 percent higher during the period of high prices of 1917 to 1920 than from 1910 to 1914.

[4]The year 1928 is omitted from this average because it was a very poor year for wheat and corn.

The three chief grain crops, as shown by the percentage distribution of income from grains (Table 10) were wheat, corn, and oats. These three crops accounted for 98 percent of the total cash income from Ohio grains during the 19 years ending in 1928. During the five years ending in 1927 the estimated income from wheat averaged 60 percent, corn 20 percent, and oats 17 percent above their pre-war levels. With the exception of corn each showed an increase in quantity sold as well as in price from the period 1910-1914 to that of 1923-1927. The quantity of wheat sold increased 18 percent and oats 6 percent, while the quantity of corn decreased by 6 percent. Farm prices of Ohio grains have stood above their pre-war level in recent years but below the prices of other Ohio farm products generally.

Poultry and eggs.—Next to the income from dairy products, the gross cash income from poultry and eggs has shown the greatest gain over pre-war years of any group of Ohio farm products. The income from poultry and eggs, Table 9, averaged $41,596,000 for the years 1924-1928 as compared with $18,449,000 for 1910 to 1914, an increase of 125 percent. During the period of high prices, 1917-1920, the estimated income from poultry and eggs averaged $38,117,000, or 107 percent higher than during the pre-war period.

The increase in income from poultry products in recent years was due to both increased production and better prices of poultry and eggs. Ohio poultry prices increased from an average of 11 cents before the war to 21 cents in 1924-1928, an increase of 91 percent, while egg prices increased from 20 cents to 29 cents, an increase of 45 percent. Both poultry and egg sales increased in quantity from 1910-1928. The estimated quantity of poultry, including ducks, turkeys, etc., sold from Ohio farms increased from an average of 43,224,000 pounds in the period 1910-1914 to 69,535,000 pounds from 1924-1928, while egg sales increased from 68,024,000 to 93,050,000 dozens. The increase of 23 million dollars in the income from Ohio poultry and eggs, therefore, was due in part to larger sales, but principally to higher prices, especially higher poultry prices.

Table 11 shows that egg sales accounted for 69 percent of the income from the Ohio poultry industry for the 19 years covered by this study. This percentage would be slightly higher if eggs sold to hatcheries were included in egg sales. The hatchery business was here considered a part of the Ohio agricultural industry, which means that eggs sold to hatcherymen were considered merely a transfer of eggs from the farm to the hatchery and, therefore, were

TABLE 10.—Grains Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

Year	Wheat			Corn			Oats			Rye			Barley			Buckwheat			Total income
	Sales	Av. price	Income	Sales	Av. price	Income	Sales	Av. price	Income	Sales	Av. price	Income	Sales	Av. price	Income	Sales	Av. price	Income	
	1000 Bu.	*Cts.*	*1000 Dol.*	*1000 Bu.*	*Cts.*	*1000 Dol.*	*1000 Bu.*	*Cts.*	*1000 Dol.*	*1000 Bu.*	*Cts.*	*1000 Dol.*	*1000 Bu.*	*Cts.*	*1000 Dol.*	*1000 Bu.*	*Cts.*	*1000 Dol.*	*1000 Dol.*
1910.....	23,332	100	23,332	25,785	59	15,213	18,281	40	7,312	273	75	205	60	63	38	314	75	235	46,335
1911.....	25,000	86	21,500	25,031	52	13,016	16,937	39	6,605	266	78	208	58	71	41	285	72	205	41,575
1912.....	12,207	101	12,330	27,418	65	17,822	23,234	42	9,758	244	83	202	59	73	43	283	74	210	40,365
1913	19,426	92	17,872	27,495	56	15,397	19,602	37	7,253	355	68	241	82	54	44	257	73	188	40,995
1914.....	25,285	93	23,515	24,592	68	16,723	14,992	40	5,997	434	73	317	91	56	51	265	78	206	46,809
1915.....	27,394	112	30,681	25,090	71	17,814	18,169	44	7,994	458	88	403	91	59	54	296	79	234	57,180
1916.....	18,893	127	23,994	23,032	77	17,735	16,005	42	6,722	365	96	351	92	64	59	269	98	263	49,124
1917.....	24,831	209	51,898	22,086	138	30,478	19,689	62	12,207	421	164	690	140	116	162	286	154	441	95,876
1918.....	29,994	207	62,088	23,949	144	34,486	22,017	73	16,073	508	165	838	286	114	326	330	167	552	114,363
1919.....	37,763	216	81,569	24,578	152	37,359	16,546	71	11,748	474	144	682	302	116	351	396	161	637	132,346
1920.....	19,364	236	45,643	31,904	138	43,976	18,279	73	13,336	355	166	588	316	116	368	417	139	580	104,491
1921....	20,957	124	25,926	29,815	57	16,849	13,648	38	5,143	346	102	353	307	59	180	374	105	391	48,842
1922.....	23,326	109	25,552	24,292	60	14,543	10,944	37	4,072	342	77	264	153	58	89	359	90	323	44,843
1923.....	26,924	104	28,012	23,958	79	18,920	13,671	46	6,288	361	72	263	164	63	103	356	87	308	53,894
1924.....	26,508	118	31,157	23,455	84	19,729	17,634	48	8,423	304	86	260	226	71	161	352	97	340	60,071
1925.....	19,016	164	31,230	18,272	85	15,565	25,267	44	11,213	245	101	248	329	81	267	356	91	323	58,846
1926.....	26,163	135	35,288	31,258	65	20,300	23,233	39	8,961	302	82	249	349	59	206	300	90	269	65,273
1927 ...	25,343	127	32,182	25,956	75	19,433	18,776	43	8,140	141	86	121	444	64	285	268	88	237	60,398
1928 ...	6,797	141	9,554	13,267	94	12,461	19,820	45	8,932	79	102	81	751	68	509	383	92	354	31,891
19-yr. av. 1910-28	.....	.....	32,280	.....	.....	20,938	....	.....	8,746	..	..	345	....	....	176	.....	.....	331	62,817
Percent	.....	.....	51.39	... .	....	33.33	....	.. .	13.92	.....	....	.55	....	....	.28	...	.....	.53	100

taken into account in sales only to the extent that baby chicks were sold to others than Ohio farmers. This income from the baby-chick industry is given in Table 16.

TABLE 11.—Poultry and Eggs Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

Year	Poultry			Eggs			Total income
	Sales	Average price	Income	Sales	Average price	Income	
	Lb.	*Cts.*	*Dol.*	*Doz.*	*Cts.*	*Dol.*	*Dol.*
1910	43,245,000	11	4,757,000	67,215,000	21	14,115,000	18,872,000
1911	43,190,000	10	4,319,000	67,491,000	17	11,473,000	15,792,000
1912	43,245,000	11	4,757,000	67,978,000	21	14,275,000	19,032,000
1913	43,200,000	12	5,184,000	68,475,000	20	13,695,000	18,879,000
1914	43,242,000	12	5,189,000	68,961,000	21	14,482,000	19,671,000
1915	43,283,000	12	5,194,000	69,226,000	20	13,845,000	19,039,000
1916	38,230,000	14	5,352,000	69,722,000	23	16,036,000	21,388,000
1917	43,289,000	18	7,792,000	70,203,000	33	23,167,000	30,959,000
1918	43,241,000	22	9,513,000	70,472,000	37	26,075,000	35,588,000
1919	43,275,000	24	10,386,000	71,148,000	43	30,594,000	40,980,000
1920	46,684,000	25	11,671,000	73,117,000	46	33,269,000	44,940,000
1921	50,619,000	21	10,630,000	75,180,000	29	21,983,000	32,613,000
1922	54,060,000	20	10,812,000	77,482,000	26	20,246,000	31,058,000
1923	57,955,000	20	11,591,000	79,577,000	27	21,158,000	32,749,000
1924	63,130,000	20	12,626,000	82,024,000	28	22,648,000	35,274,000
1925	68,148,000	21	14,311,000	84,283,000	31	26,540,000	40,851,000
1926	70,523,000	22	15,515,000	98,097,000	30	29,253,000	44,768,000
1927	74,819,000	21	15,712,000	103,342,000	26	26,435,000	42,147,000
1928	70,957,000	23	16,320,000	97,502,000	29	28,618,000	44,938,000
19-yr. av., 1910–28	.....	.....	9,559,000	.....	.....	21,469,000	31,028,000
Percent	.....	.....	31	.....	.....	69	100

Tobacco.—Table 12 gives the estimated quantity and price of tobacco sold from Ohio farms, together with the estimated gross cash income from the sales of this crop from 1910 to 1928. The most outstanding fact is that there has been a fairly steady decline in tobacco production since the war period. Production averaged 37 million pounds per year from 1924 to 1928, less than half of the 80 million from 1910 to 1914 and 89 million pounds in the high-price period, 1917-1920.

Tobacco prices were very high during the war and still averaged well above their pre-war level in 1928. From 1910 to 1914 the Ohio farm price of tobacco averaged 9 cents per pound, from 1917 to 1920, 22.8 cents, an increase of 153 percent over pre-war, and for 1924 to 1928, 15 cents, or 67 percent above pre-war.

Price alone, however, cannot maintain income. Higher prices than before the war, coupled with a production of less than one-half of what it was from 1910 to 1914, gave Ohio tobacco producers an average income of $5,571,000 in the last five years covered by this study as compared with $7,442,000 before the war.

TABLE 12.—Tobacco Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

	Sales	Average price	Income
	Lb.	*Cts.*	*Dol.*
1910	88,618,000	10.4	9,251,000
1911	88,869,000	8.5	7,532,000
1912	81,337,000	7.6	6,217,000
1913	78,768,000	9.2	7,210,000
1914	61,926,000	11.3	6,999,000
1915	78,306,000	8.8	6,896,000
1916	84,650,000	9.1	7,733,000
1917	95,122,000	13.4	12,723,000
1918	99,040,000	24.8	24,598,000
1919	97,021,000	19.8	19,197,000
1920	65,214,000	33.1	21,601,000
1921	59,825,000	13.0	7,800,000
1922	38,721,000	15.1	5,858,000
1923	41,433,000	18.9	7,814,000
1924	42,150,000	14.5	6,114,000
1925	30,525,000	19.2	5,855,000
1926	50,344,000	14.9	7,517,000
1927	37,007,000	12.0	4,428,000
1928	24,916,000	15.8	3,942,000
19-year average, 1910-28			9,436,000

Wool.—The estimated gross cash income from Ohio wool, Table 13, averaged $3,479,000 from 1910 to 1924, $8,248,000 from 1917 to 1920, and $5,982,000 from 1924 to 1928. This places the average income in the five years, 1924 to 1928, 27 percent below its level during the period of high prices, but still 82 percent above pre-war.

TABLE 13.—Wool Sold From Ohio Farms—Sales, Prices, and Gross Cash Income, 1910-1928

	Sales	Average price	Income
	Lb.	*Cts.*	*Dol.*
1910	16,900,000	24	4,056,000
1911	18,850,000	19	3,582,000
1912	16,875,000	23	3,881,000
1913	14,950,000	18	2,691,000
1914	13,844,000	23	3,184,000
1915	13,600,000	28	3,808,000
1916	13,650,000	33	4,505,000
1917	13,650,000	61	8,327,000
1918	12,600,000	66	8,316,000
1919	13,104,000	61	7,993,000
1920	14,946,000	56	8,357,000
1921	13,753,000	22	3,061,000
1922	13,148,000	40	5,268,000
1923	13,570,000	47	6,400,000
1924	14,044,000	42	5,946,000
1925	14,452,000	41	5,994,000
1926	14,745,000	37	5,519,000
1927	15,617,000	35	5,537,000
1928	15,818,000	44	6,914,000
19-year average, 1910-28			5,439,000

Wool prices averaged 21 cents during 1910 to 1914, 61 cents during 1917 to 1920, and 40 cents during 1924 to 1928, which is 90 percent above the price in pre-war days.

The production of wool in Ohio in recent years has averaged slightly under what it was from 1910 to 1914. For the five years ending 1928 production averaged 14,935,000 pounds as compared with 16,284,000 for the five years ending 1914.

Vegetables[5].—The most important single vegetable crop in Ohio was that of potatoes, Table 14. The average income from the sale of potatoes from Ohio farms amounted to $7,516,000, or 41 percent of the total income from vegetables for the nine years, 1920 to 1928. The poorest potato year for Ohio farmers during this period was 1921, when the income from this source fell to slightly under 3 million dollars, and the best year was 1927 in which the gross cash income from potato sales amounted to slightly less than 11 million dollars.

TABLE 14.—Vegetables Sold From Ohio Farms—Estimated Gross Cash Income, 1920-1928

Year	Potatoes	Dry onions	Sweet corn	Cabbage	Celery	All other*	Total
	Dol.	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
1920	11,363,000	1,110,000	1,813,000	1,305,000	709,000	7,259,000	23,559,000
1921	2,931,000	2,092,000	557,000	595,000	491,000	5,836,000	12,502,000
1922	4,645,000	1,494,000	604,000	685,000	461,000	5,907,000	13,796,000
1923	8,223,000	2,497,000	938,000	900,000	340,000	7,259,000	20,157,000
1924	6,357,000	1,750,000	639,000	595,000	279,000	6,761,000	16,378,000
1925	8,684,000	1,302,000	2,354,000	1,024,000	394,000	6,761,000	20,519,000
1926	8,158,000	1,067,000	1,129,000	527,000	297,000	6,761,000	17,949,000
1927	10,972,000	1,686,000	477,000	1,115,000	455,000	6,761,000	21,466,000
1928	6,312,000	1,857,000	538,000	892,000	418,000	6,832,000	16,849,000
9-yr. av., 1920-28	7,516,000	1,651,000	1,005,000	849,000	427,000	6,682,000	18,131,000
Percent	41.5	9.1	5.5	4.7	2.4	36.8	100

*All other outdoor and greenhouse vegetables.

In addition to potatoes other important vegetable crops in Ohio are onions, sweet corn, cabbage, celery, and tomatoes. While accounting for only 5 percent of the total gross cash income from the Ohio agricultural industry these vegetable crops are very significant for certain localities. Onions, for example, are produced very largely in Hardin County. In 1924, according to the 1925 Census of Agriculture, 54 percent of the total acreage of dry onions in the State was in Hardin County. This Census also shows that 50 percent of the acreage of sweet corn in Ohio was in 9 counties, and

[5]Due to a lack of adequate information the income from vegetables, fruits, and miscellaneous products was not calculated separately for the period 1910 to 1919.

that 60 percent of the cabbage acreage was in 8 counties. Celery production, likewise, was quite centralized, coinciding closely with the onion territory on the peat or muck soils, such as those located in Hardin and Medina Counties. Approximately one-fourth of the value of Ohio's commercial tomato crop is produced in Washington County. Greenhouse and outdoor vegetables are produced in the vicinity of large cities, such as Cleveland, Cincinnati, Toledo, Dayton, and Columbus.

For the nine years 1920 to 1928, the estimated gross cash income from Ohio vegetables averaged slightly more than 18 million dollars. Of this income 7½ million came from the sale of potatoes, 6½ million from outdoor and greenhouse vegetables grown mainly around large cities, and the remaining 4 million from the sale of dry onions, sweet corn, cabbage, and celery.

Fruits.—The total income from fruits accounted for 3 percent of the total gross cash income from Ohio agriculture. Table 15 shows that 50 percent of the total income from Ohio fruits during the nine years ending 1928 was derived from the sale of apples. Peaches were the second most important, making up 20 percent of the gross cash income from fruits. The next fruits in order of their importance were strawberries, grapes, other small fruits, including currants, gooseberries, raspberries, etc., cherries, pears, and plums.

Miscellaneous products.—There are some products sold from Ohio farms which do not fit well in the classification scheme and are, therefore, grouped together as miscellaneous products in Table 16. These products may be classified roughly into crop and livestock products. The crops in order of their importance are hay, flowers, forest products, sugar beets, nursery products, maple syrup, and sorghum. The animal products are baby chicks, honey, and beeswax.

The aggregate income from these eight miscellaneous products averaged 25 million dollars, or 7 percent of the total gross cash income from Ohio agriculture for the 9-year period, 1920-1928. There was little change in the total gross cash income from these products from 1921 to 1928. For the first four years of the period the income from this group averaged $22,924,000 and for the last four years $23,752,000. The most noticeable change in income was that from flowers and baby chicks. Apparently the income from these two products was not affected greatly by the depression that hit Ohio agriculture in 1921 and 1922, but has increased rather steadily since 1920.

TABLE 15.—Fruit Sold From Ohio Farms—Estimated Gross Cash Income, 1920-1928

Year	Apples	Peaches	Pears	Plums	Cherries	Grapes	Straw-berries	Other small fruits	Total
	Dol.	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
1920	8,382,000	5,108,000	248,000	346,000	544,000	775,000	886,000	579,000	16,868,000
1921	4,702,000	980,000	104,000	49,000	127,000	1,273,000	1,248,000	821,000	9,304,000
1922	4,777,000	2,270,000	175,000	100,000	253,000	1,575,000	447,000	296,000	9,893,000
1923	6,675,000	1,886,000	132,000	103,000	391,000	915,000	990,000	648,000	11,740,000
1924	4,433,000	1,233,000	156,000	79,000	195,000	904,000	988,000	648,000	8,636,000
1925	3,908,000	1,954,000	145,000	78,000	203,000	747,000	799,000	527,000	8,361,000
1926	4,576,000	1,921,000	118,000	82,000	421,000	580,000	1,440,000	944,000	10,082,000
1927	5,329,000	1,875,000	106,000	69,000	265,000	600,000	927,000	608,000	9,779,000
1928	4,380,000	1,958,000	115,000	60,000	220,000	861,000	1,066,000	700,000	9,360,000
9-year average, 1920-28	5,240,000	2,132,000	144,000	107,000	291,000	914,000	977,000	641,000	10,447,000
Percent	50.2	20.4	1.4	1.0	2.8	8.8	9.3	6.1	100

*Included here are such crops as gooseberries, currants, raspberries, and blackberries.

TABLE 16.—Hay, Flowers, Forest Products, Sugar Beets, Nursery Products, Maple Syrup and Sorghum, Baby Chicks, Honey and Beeswax, Sold From Ohio Farms—Estimated Gross Cash Income*, 1920-1928

Year	Hay	Flowers	Forest products	Sugar beets	Nursery products*	Maple syrup and sorghum	Baby chicks*	Honey and beeswax	Total
	Dol.	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
1920	14,197,000	4,773,000	8,588,000	4,313,000	1,023,000	1,824,000	352,000	336,000	35,406,000
1921	9,473,000	5,234,000	2,461,000	1,596,000	1,100,000	679,000	422,000	269,000	21,234,000
1922	7,690,000	5,695,000	2,834,000	1,534,000	1,168,000	840,000	506,000	105,000	20,372,000
1923	7,226,000	6,156,000	3,532,000	3,620,000	1,245,000	1,452,000	608,000	34,000	23,873,000
1924	10,240,000	6,617,000	3,200,000	2,986,000	1,312,000	1,061,000	729,000	72,000	26,217,000
1925	7,205,000	7,078,000	2,940,000	2,946,000	1,400,000	826,000	875,000	3,000	23,273,000
1926	6,510,000	7,539,000	2,960,000	2,380,000	1,467,000	1,369,000	1,050,000	68,000	23,343,000
1927	7,528,000	8,000,000	2,528,000	2,276,000	1,554,000	1,185,000	1,260,000	246,000	24,577,000
1928	6,045,000	8,461,000	2,594,000	1,968,000	1,837,000	1,234,000	1,537,000	141,000	23,817,000
9-year average 1920-28	8,457,000	6,617,010	3,515,000	2,624,000	1,345,000	1,163,000	815,000	142,000	24,679,000
Percent	34.3	26.8	14.2	10.6	5.5	4.7	3.3	0.6	100

*The income included here is only that amount estimated to come from the sale of these products to others than Ohio farmers.

Such products as hay, nursery stock, and baby chicks are sold in part to Ohio farmers and to this extent are not included in Table 16. Most baby chicks sold by Ohio hatcherymen, for example, are bought by Ohio farmers, and are, therefore, not considered here as income for the agricultural industry as a whole, but rather as a transfer from one part of the industry to another. The estimated income from all baby chicks sold by Ohio hatcherymen amounted to more than 5 million dollars in 1928, while that from nursery products was not less than 2½ million dollars.

RELIABILITY OF FOREGOING ESTIMATES

The mere fact that the foregoing figures are **estimates** is sufficient to indicate to the reader that they contain some error. Were they based on an accurate accounting system, which, of course, would be economically impossible, the reader would have a right to expect little variation from perfect accuracy. Numerical data gotten together by means of estimates, and this includes the mass of our collective numerical data now available, are approximations. The mass of data now available in such publications as the Yearbooks of the United States Department of Agriculture and even in the United States Census are based on estimates and are, therefore, approximations. For example, the farmer is asked by the Census enumerator how many chickens he had on hand at a certain date. He probably will be obliged to estimate the number, as very few farmers can tell exactly how many chickens they had on hand at a certain date or how many eggs their hens laid during the year. To answer these questions exactly would require an accurate detailed accounting system. Most of the collective numerical data which are now available have been secured thru estimates and, therefore, are not absolutely accurate. The important question then is whether or not the variation from absolute accuracy is sufficient to impair the usefulness of the data?

The writer does not regard the estimates presented in this bulletin as final, but rather as the best that could be obtained from available sources. They are subject to change as new and more complete sources of material become available. These estimates will serve more accurately to depict the trend in the income and expenses of the Ohio agricultural industry than to show the absolute income and expenses of this industry. However, they may be regarded as sufficiently accurate to be used as absolute amounts for all practical purposes.

For the benefit of those who make use of these estimates, it should be said that the errors entering into the estimates of gross cash income are smaller, due to more complete source material, than those entering into the estimates of expenses and of the value of home-produced food and fuel consumed by Ohio farm households. It should also be said that the estimates of gross cash income from the major products, such as livestock, dairy products, and grains, vary less from the actual income than do those from the less important products, such as fruits, some vegetables, and forest and nursery products, and baby chicks, for more complete information was available upon which the incomes from these more important products could be estimated.

MONTHLY ESTIMATES OF GROSS CASH INCOME

The monthly estimates of gross cash income from the various groups[6] of products sold from Ohio farms from 1920 to 1928 are given in Table 17. There are two principal reasons for presenting these monthly estimates. In the first place, those interested in the seasonal variation of the total gross cash income or of the income from various groups of products will find in this table the necessary data from which this variation can be calculated[7]. In the second place, this table will serve those who desire the annual estimates of income on a crop-year basis rather than on a calendar-year basis, as given in the preceding tables. Monthly estimates of income are totaled in this table each twelve months ending in June and in December.

[6]The reader is cautioned, however, against placing the same amount of reliance upon the monthly distribution of income from such products as fruits, vegetables, and miscellaneous products as upon that from the more important sources such as livestock, grain, dairy and poultry products, for the reason that more reliable information was available upon which the latter estimates could be made.

[7]The estimated income from each product, such as hogs, wheat, corn, and eggs, by months from 1920 to 1928, is available in mimeographed form which may be had by addressing the Rural Economics Department of the Ohio State University, Ohio Agricultural Experiment Station, Columbus, Ohio.

TABLE 17.—Estimated Monthly Gross Cash Income From the Sale of Products From Ohio Farms, 1920-1928

	Meat animals	Dairy products	Grains	Poultry and eggs	Vegetables	Fruits	Tobacco and wool	All other products	Total
1920	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
January	22,139,000	6,801,000	8,834,000	2,498,000	1,075,000	201,000	4,616,000	2,089,000	48,253,000
February	15,267,000	6,523,000	8,404,000	3,141,000	692,000	179,000	7,474,000	2,381,000	44,061,000
March	14,533,000	7,475,000	8,496,000	4,253,000	1,632,000	138,000	6,051,000	3,011,000	45,589,000
April	15,056,000	7,355,000	7,623,000	4,789,000	2,044,000	101,000	2,609,000	3,768,000	43,345,000
May	16,515,000	8,226,000	8,558,000	4,740,000	1,061,000	52,000	3,268,000	3,044,000	45,464,000
June	15,531,000	8,912,000	10,066,000	4,252,000	1,857,000	1,031,000	4,308,000	3,030,000	48,979,000
July	14,253,000	8,143,000	11,106,000	3,354,000	2,517,000	1,398,000	681,000	2,212,000	43,664,000
August	12,562,000	7,510,000	16,450,000	3,406,000	1,816,000	908,000	55,000	1,625,000	44,332,000
September	13,307,000	7,582,000	11,098,000	3,122,000	3,597,000	4,328,000	166,000	2,133,000	45,333,000
October	13,152,000	6,494,000	5,380,000	3,441,000	3,789,000	5,926,000	221,000	4,362,000	42,765,000
November	14,534,000	5,793,000	4,167,000	3,905,000	2,863,000	2,243,000	239,000	4,902,000	38,646,000
December	11,779,000	5,413,000	4,309,000	4,039,000	616,000	363,000	278,000	2,849,000	29,646,000
Total, 12 months ending December, 1920	178,628,000	86,227,000	104,491,000	44,940,000	23,559,000	16,868,000	29,958,000	35,406,000	520,077,000
1921									
January	12,369,000	5,271,000	4,905,000	2,452,000	735,000	191,000	1,656,000	1,543,000	29,122,000
February	7,730,000	4,716,000	3,663,000	2,054,000	776,000	385,000	2,673,000	1,342,000	23,339,000
March	9,104,000	5,484,000	3,603,000	2,713,000	827,000	419,000	2,165,000	1,978,000	26,293,000
April	8,646,000	5,277,000	2,959,000	2,836,000	869,000	195,000	912,000	2,389,000	24,083,000
May	8,469,000	4,592,000	3,776,000	2,929,000	1,044,000	125,000	1,062,000	2,078,000	24,075,000
June	9,207,000	5,087,000	4,808,000	2,566,000	1,344,000	1,453,000	1,446,000	1,973,000	27,884,000
Total, 12 months ending June, 1921	135,112,000	71,362,000	76,224,000	36,817,000	20,793,000	17,934,000	11,554,000	29,386,000	399,182,000
July	6,736,000	5,097,000	8,890,000	2,568,000	1,192,000	572,000	361,000	979,000	26,395,000
August	7,655,000	5,064,000	5,580,000	2,636,000	909,000	1,183,000	30,000	1,330,000	24,387,000
September	7,456,000	5,000,000	3,700,000	2,350,000	956,000	2,130,000	82,000	1,107,000	22,781,000
October	7,850,000	4,722,000	2,605,000	2,696,000	2,041,000	2,291,000	115,000	2,454,000	24,774,000
November	8,195,000	4,253,000	1,930,000	3,343,000	1,070,000	236,000	151,000	2,235,000	21,413,000
December	8,313,000	4,178,000	2,423,000	3,470,000	739,000	124,000	208,000	1,826,000	21,281,000
Total, 12 months ending December, 1921	101,730,000	58,741,000	48,842,000	32,613,000	12,502,000	9,304,000	10,861,000	21,234,000	295,827,000

TABLE 17.—Estimated Monthly Gross Cash Income From the Sale of Products From Ohio Farms, 1920-1928—Continued

	Meat animals	Dairy products	Grains	Poultry and eggs	Vegetables	Fruits	Tobacco and wool	All other products	Total
1922	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
January	6,879,000	3,611,000	3,146,000	1,868,000	629,000	43,000	1,222,000	1,057,000	18,455,000
February	6,942,000	3,664,000	2,980,000	2,191,000	680,000	47,000	1,987,000	1,271,000	19,762,000
March	10,029,000	4,094,000	2,781,000	2,006,000	664,000	47,000	1,606,000	1,491,000	22,718,000
April	8,597,000	4,146,000	2,328,000	2,889,000	976,000	48,000	743,000	2,219,000	21,945,000
May	10,530,000	4,606,000	2,762,000	3,233,000	837,000	48,000	1,231,000	1,855,000	25,102,000
June	9,152,000	5,446,000	2,489,000	2,675,000	1,355,000	567,000	2,645,000	1,445,000	25,774,000
Total, 12 months ending June, 1922	98,334,000	53,881,000	41,614,000	31,925,000	12,047,000	7,336,000	10,381,000	19,269,000	274,787,000
July	8,118,000	5,035,000	8,431,000	2,239,000	1,270,000	1,009,000	677,000	737,000	27,516,000
August	7,910,000	4,490,000	5,717,000	2,068,000	839,000	943,000	54,000	1,034,000	23,055,000
September	8,414,000	4,775,000	3,347,000	2,291,000	1,707,000	2,562,000	165,000	1,534,000	24,795,000
October	9,829,000	4,244,000	3,250,000	2,674,000	2,135,000	3,735,000	226,000	2,554,000	28,647,000
November	11,400,000	4,599,000	3,447,000	3,382,000	1,963,000	740,000	276,000	2,645,000	28,452,000
December	11,499,000	5,154,000	4,165,000	3,542,000	742,000	104,000	294,000	2,530,000	28,030,000
Total, 12 months ending December, 1922	109,299,000	53,864,000	44,843,000	31,058,000	13,796,000	9,893,000	11,126,000	20,372,000	294,251,000
1923									
January	9,644,000	5,179,000	4,030,000	2,055,000	1,104,000	58,000	1,686,000	1,354,000	25,110,000
February	7,482,000	4,916,000	3,998,000	2,173,000	1,025,000	61,000	2,711,000	1,341,000	23,707,000
March	8,795,000	5,552,000	3,743,000	2,435,000	1,298,000	137,000	2,183,000	1,934,000	26,077,000
April	9,012,000	5,717,000	2,557,000	3,229,000	1,542,000	153,000	1,034,000	1,639,000	25,883,000
May	8,887,000	5,905,000	2,754,000	3,231,000	1,003,000	73,000	1,622,000	2,008,000	25,483,000
June	7,710,000	6,817,000	2,657,000	2,543,000	1,712,000	1,261,000	3,156,000	1,420,000	27,276,000
Total, 12 months ending June, 1923	108,700,000	62,383,000	48,096,000	31,862,000	16,340,000	10,836,000	14,084,000	21,730,000	314,031,000
July	6,559,000	6,161,000	7,273,000	2,301,000	1,772,000	988,000	756,000	820,000	26,630,000
August	5,893,000	5,775,000	8,661,000	2,395,000	2,382,000	450,000	64,000	761,000	26,381,000
September	6,820,000	5,965,000	4,094,000	2,531,000	2,237,000	2,276,000	189,000	1,648,000	25,760,000
October	8,917,000	5,388,000	4,271,000	2,694,000	2,158,000	4,326,000	252,000	3,720,000	31,726,000
November	10,862,000	5,093,000	5,670,000	3,573,000	3,216,000	1,613,000	315,000	3,654,000	33,996,000
December	11,909,000	5,235,000	4,186,000	3,589,000	708,000	344,000	246,000	2,574,000	28,791,000
Total, 12 months ending December, 1923	102,490,000	67,703,000	53,894,000	32,749,000	20,157,000	11,740,000	14,214,000	23,873,000	326,820,000

TABLE 17.—Estimated Monthly Gross Cash Income From the Sale of Products From Ohio Farms, 1920-1928—Continued

	Meat animals	Dairy products	Grains	Poultry and eggs	Vegetables	Fruits	Tobacco and wool	All other products	Total
1924	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
January	10,272,000	5,492,000	5,415,000	2,135,000	775,000	219,000	1,351,000	1,689,000	27,348,000
February	6,748,000	5,290,000	6,731,000	2,481,000	841,000	242,000	2,144,000	1,558,000	26,035,000
March	7,619,000	5,878,000	4,842,000	2,373,000	815,000	162,000	1,717,000	2,263,000	25,669,000
April	8,266,000	5,495,000	2,958,000	2,981,000	1,369,000	174,000	873,000	2,836,000	24,952,000
May	7,509,000	5,636,000	3,692,000	3,111,000	1,159,000	87,000	1,489,000	2,118,000	24,801,000
June	6,862,000	6,473,000	3,050,000	2,967,000	1,691,000	1,150,000	2,788,000	1,691,000	26,672,000
Total, 12 months ending June, 1924	98,236,000	67,881,000	60,843,000	33,131,000	19,123,000	12,031,000	12,184,000	25,332,000	328,761,000
July	6,352,000	5,786,000	5,089,000	2,560,000	1,331,000	633,000	646,000	1,209,000	23,606,000
August	6,432,000	5,530,000	8,923,000	2,791,000	2,230,000	1,028,000	55,000	1,642,000	28,631,000
September	8,486,000	5,619,000	5,565,000	2,812,000	1,634,000	721,000	174,000	1,996,000	27,007,000
October	11,347,000	4,837,000	4,926,000	3,109,000	996,000	2,824,000	249,000	3,389,000	31,677,000
November	11,728,000	4,188,000	4,242,000	3,787,000	2,912,000	1,145,000	333,000	3,298,000	31,633,000
December	12,031,000	4,840,000	4,638,000	4,167,000	625,000	251,000	241,000	2,528,000	29,321,000
Total, 12 months ending December, 1924	103,652,000	65,064,000	60,071,000	35,274,000	16,378,000	8,636,000	12,060,000	26,217,000	327,352,000
1925									
January	10,954,000	4,642,000	6,794,000	2,236,000	617,000	143,000	1,302,000	1,560,000	28,248,000
February	8,086,000	4,626,000	5,310,000	2,397,000	677,000	203,000	2,056,000	1,552,000	24,907,000
March	9,679,000	5,283,000	3,113,000	2,834,000	693,000	159,000	1,638,000	2,076,000	25,475,000
April	9,672,000	5,019,000	2,414,000	3,768,000	927,000	52,000	846,000	2,677,000	25,375,000
May	8,640,000	5,839,000	3,754,000	4,014,000	928,000	49,000	1,341,000	2,331,000	26,896,000
June	8,935,000	7,119,000	3,718,000	3,795,000	1,635,000	931,000	2,778,000	1,643,000	30,554,000
Total, 12 months ending June, 1925	112,342,000	63,328,000	58,486,000	38,270,000	15,205,000	8,139,000	11,659,000	25,901,000	333,330,000
July	8,712,000	6,471,000	7,537,000	3,255,000	1,897,000	588,000	746,000	846,000	30,052,000
August	8,662,000	5,805,000	7,688,000	3,154,000	2,653,000	578,000	65,000	948,000	29,553,000
September	10,152,000	5,785,000	4,376,000	3,059,000	2,699,000	2,020,000	195,000	1,255,000	29,541,000
October	13,628,000	5,701,000	3,553,000	3,237,000	4,603,000	2,704,000	261,000	3,191,000	36,878,000
November	12,782,000	5,035,000	4,556,000	4,600,000	2,403,000	794,000	326,000	3,068,000	33,564,000
December	11,621,000	5,096,000	6,033,000	4,502,000	787,000	140,000	295,000	2,126,000	30,600,000
Total, 12 months ending December, 1925	121,523,000	66,421,000	58,846,000	40,851,000	20,519,000	8,361,000	11,849,000	23,273,000	351,643,000

TABLE 17.—Estimated Monthly Gross Cash Income From the Sale of Products From Ohio Farms, 1920-1928—Continued

	Meat animals	Dairy products	Grains	Poultry and eggs	Vegetables	Fruits	Tobacco and wool	All other products	Total
1926	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
January	12,583,000	4,783,000	6,648,000	3,079,000	1,164,000	208,000	1,655,000	1,105,000	31,225,000
February	10,249,000	4,777,000	6,091,000	2,695,000	1,423,000	252,000	2,639,000	1,387,000	29,513,000
March	12,217,000	5,379,000	4,455,000	3,162,000	954,000	217,000	2,117,000	2,351,000	30,852,000
April	12,683,000	5,120,000	3,204,000	4,244,000	1,067,000	252,000	997,000	3,199,000	30,766,000
May	11,997,000	5,738,000	3,967,000	4,668,000	1,070,000	117,000	1,486,000	2,295,000	31,338,000
June	11,957,000	6,210,000	3,334,000	4,251,000	1,627,000	1,728,000	2,551,000	1,831,000	33,489,000
Total, 12 months ending June, 1926	137,243,000	65,900,000	61,442,000	43,906,000	22,347,000	9,598,000	13,333,000	23,602,000	377,371,000
July	11,424,000	6,693,000	8,978,000	3,457,000	1,405,000	1,196,000	673,000	898,000	34,724,000
August	9,561,000	5,551,000	12,595,000	3,246,000	2,743,000	508,000	55,000	809,000	35,068,000
September	11,651,000	5,768,000	4,502,000	3,224,000	1,468,000	1,816,000	164,000	1,080,000	29,673,000
October	12,008,000	5,247,000	3,478,000	3,544,000	1,740,000	2,317,000	230,000	2,410,000	30,974,000
November	8,716,000	4,811,000	3,982,000	4,424,000	2,573,000	1,203,000	280,000	3,499,000	29,488,000
December	9,277,000	5,032,000	4,039,000	4,774,000	715,000	268,000	189,000	2,479,000	26,773,000
Total, 12 months ending December, 1926	134,323,000	65,109,000	65,273,000	44,768,000	17,949,000	10,082,000	13,036,000	23,343,000	373,883,000
1927									
January	11,157,000	5,159,000	5,495,000	2,853,000	1,028,000	298,000	999,000	1,247,000	28,236,000
February	8,107,000	4,974,000	6,113,000	2,536,000	1,087,000	297,000	1,580,000	1,638,000	26,332,000
March	9,806,000	5,881,000	4,455,000	3,323,000	1,299,000	595,000	1,256,000	2,546,000	29,161,000
April	10,048,000	5,780,000	2,915,000	4,129,000	1,280,000	615,000	671,000	2,957,000	28,395,000
May	10,295,000	6,183,000	3,851,000	4,077,000	948,000	403,000	1,216,000	2,709,000	29,682,000
June	9,222,000	7,267,000	4,049,000	3,267,000	1,707,000	1,163,000	2,631,000	2,020,000	31,326,000
Total, 12 months ending June, 1927	121,272,000	68,346,000	64,452,000	42,854,000	17,993,000	10,679,000	9,944,000	24,292,000	359,832,000
July	7,877,000	6,699,000	9,879,000	3,024,000	1,596,000	647,000	677,000	843,000	31,242,000
August	7,902,000	5,765,000	9,308,000	2,734,000	1,805,000	320,000	58,000	1,001,000	28,893,000
September	7,899,000	6,059,000	5,207,000	3,100,000	5,351,000	2,208,000	174,000	1,318,000	31,316,000
October	10,228,000	5,542,000	4,193,000	3,163,000	3,230,000	2,086,000	232,000	3,085,000	31,759,000
November	9,902,000	4,977,000	2,353,000	4,949,000	1,493,000	833,000	298,000	2,963,000	27,768,000
December	10,363,000	5,171,000	2,580,000	4,992,000	642,000	314,000	173,000	2,250,000	26,485,000
Total, 12 months ending December, 1927	112,806,000	69,457,000	60,398,000	42,147,000	21,466,000	9,779,000	9,965,000	24,577,000	350,595,000

TABLE 17.—Estimated Monthly Gross Cash Income From the Sale of Products From Ohio Farms, 1920-1928—Concluded

	Meat animals	Dairy products	Grains	Poultry and eggs	Vegetables	Fruits	Tobacco and wool	All other products	Total
1928	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*	*Dol.*
January	10,872,000	6,097,000	2,789,000	3,148,000	761,000	343,000	888,000	1,247,000	26,145,000
February	9,555,000	5,164,000	2,726,000	2,774,000	817,000	414,000	1,391,000	1,466,000	24,307,000
March	8,379,000	5,904,000	3,031,000	2,946,000	1,334,000	336,000	1,101,000	2,181,000	25,212,000
April	9,305,000	5,641,000	1,749,000	4,139,000	998,000	172,000	645,000	3,285,000	25,934,000
May	8,479,000	6,312,000	1,878,000	4,589,000	998,000	60,000	1,426,000	2,686,000	26,428,000
June	8,155,000	6,831,000	1,597,000	3,955,000	1,661,000	1,303,000	3,418,000	1,899,000	28,819,000
Total, 12 months ending June, 1928	108,916,000	70,162,000	47,290,000	43,513,000	20,686,000	9,036,000	10,481,000	24,224,000	334,308,000
July	7,485,000	6,777,000	3,500,000	3,385,000	1,381,000	623,000	845,000	870,000	24,866,000
August	5,715,000	6,148,000	5,259,000	3,048,000	1,814,000	366,000	68,000	918,000	23,336,000
September	7,488,000	6,543,000	2,799,000	3,236,000	2,342,000	2,403,000	199,000	1,316,000	26,326,000
October	11,914,000	5,773,000	2,142,000	3,535,000	2,712,000	2,548,000	266,000	2,566,000	31,456,000
November	11,907,000	5,216,000	2,162,000	4,996,000	1,258,000	669,000	332,000	2,852,000	29,392,000
December	11,103,000	5,370,000	2,259,000	5,187,000	773,000	123,000	277,000	2,531,000	27,623,000
Total, 12 months ending December, 1928	110,357,000	71,776,000	31,891,000	44,938,000	16,849,000	9,360,000	10,856,000	23,817,000	319,844,000

BIBLIOGRAPHY

BOOKS

Federal Trade Commission. National wealth and income. Government Printing Office, Washington, D. C., 1926.

Fisher, Irving. The nature of capital and income. The Macmillan Company, New York, 1906.

Hewett, William W. The definition of income and its application in Federal taxation. Westbrook Publishing Company, Philadelphia, 1925.

King, W. I. The wealth and income of the people of the United States. The Macmillan Company, New York, 1915.

National Bureau of Economic Research, New York.

Volume I. Income in the United States: Its amount and distribution, 1921.

Volume II. Income in the United States: Its amount and distribution 1909-1919, 1922.

Volume VII. Income in the Various States: Its sources and distribution, 1919, 1920, and 1921. 1925.

National Industrial Conference Board. The agricultural problem in the United States, 1926.

BULLETINS AND PERIODICALS

Bjorka, Knute. Income of Iowa Agriculture, 1920 to 1926. Circular 104, Iowa Agricultural Experiment Station, Ames, Iowa, 1927.

Black, A. G., and Dortha D. Kettridge. State indices of prices of farm products. Journal of Farm Economics, Vol. X, No. 3, p. 312-330, July, 1928.

Bureau of Agricultural Economics, See July issues since 1924, of Crops and Markets, published by the United States Department of Agriculture.

Ebling, W. H. Farm production and gross income. Wisconsin Agriculture, a statistical atlas, 1926-27. Bulletin 90, Cooperative Crop and Livestock Reporting Service, Madison, Wisconsin.

Fisher, Irving. The income concept in the light of experience. A reprint from Wieser Fistschrift. Vol. III, 1927.

Falconer, J. I. Research in agricultural income. Journal of Farm Economics. Vol. X, No. 1, p. 71-83, January, 1928.

Goldenweiser, E. A. The farmer's income. Farmers Bulletin No. 764 of the United States Department of Agriculture, 1916.

Graves, L. M. The Brookmire estimates of cash income of farmers. Journal of Farm Economics. Vol. X, No. IV, pp. 499-505, October, 1928.

Spillman, W. J. The farmer's income. Circular 132 of the Bureau of Plant Industry of the United States Department of Agriculture, 1913.

Taylor, H. C. and Jacob Perlman. The share of agriculture in the national income—revised and new figures for 1925 and 1926. The Journal of Land and Public Utility Economics, May, 1927.

Tolley, H. R. The Bureau of Agricultural Economics estimates of agricultural income in the United States. Journal of Farm Economics, Vol. XI, No. 1, pp. 46-63, January, 1929.